

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1(Currently Amended). A polymer composition for display mediums, comprising:

 a co-polymer composite of an alkyl material and a phosphonate material; and
 luminescent metal ions dispersed in the composite, wherein the composition ~~can~~
~~be~~ is used for displays.

Claim 2(Original). The composition of claim 1, wherein the alkyl material includes:
 alkyl acrylate.

Claim 3(Original). The composition of claim 1, wherein the alkyl material includes:
 alkyl methacrylate.

Claim 4(Original). The composition of claim 1, wherein the phosphate material
includes:
 dialkyl vinylbenzylphosphonate.

Claim 5(Original). The composition of claim 1, wherein the phosphate material
includes:
 alkyl vinylbenzylphosphonic acid monoester.

Claim 6(Original). The composition of claim 1, wherein the phosphate material
includes:

vinylbenzylphosphonic acid .

Claim 7(Original). The composition of claim 1, wherein the composite has a molar ratio of:

approximately 20% to approximately 95% acrylate material; and
approximately 80 %to approximately 5% phosphate material.

Claim 8(Original). The composition of claim 1, wherein the luminescent metal ions include:

rare earth compounds.

Claim 9(Currently Amended). The composition of claim 1, wherein the luminescent metal ions include:

NaYF₄:ErYb₂

Claim 10(Original). The composition of claim 1, wherein the composite is:
phosphorylated polymethyl methacrylate(p-PPMA).

Claim 11(Original). The composition of claim 1, wherein the luminescent metal ions include:

rare earth ions co-doped with Yb³⁺ in fluoride and orthophosphate crystalline hosts.

Claim 12(Original). The composition of claim 11, wherein the doping ion further includes:

Tm.

Claim 13(Original). The composition of claim 11, wherein the doping ion further includes:

Er.

Claim 14(Original). The composition of claim 11, wherein the doping ion further includes:

Ho.

Claim 15(Original). The composition of claim 11, wherein the doping ion further includes:

Nd.

Claim 16(Original). The composition of claim 11, wherein the doping ion further includes:

Pr.

Claim 17(Original). The composition of claim 11, wherein the doping ion further includes:

Ce.

Claim 18(Original). The composition of claim 11, wherein the crystalline hosts include:

NaYF₄.

Claim 19(Original). The composition of claim 11, wherein the crystalline hosts include:

KYF.

Claim 20(Original). The composition of claim 11, wherein the crystalline hosts include:

YLF.

Claim 21(Original). The composition of claim 11, wherein the crystalline hosts include:

LuPO₄.

Claim 22(Original). A polymer composition for optical applications, comprising:

a co-polymer composite host of an alkyl material and a phosphonate material; and
luminescent metal ions dispersed in the composite host without cracking and
delamination of the composite host, wherein the composition is used for optical
applications.

Claim 23(Original). A method of making a polymer composition, comprising the steps
of:

forming a co-polymer from an alkyl material and a phosphonate material; and
dispersing luminescent metal ions in the co-polymer without cracking and
delaminating of the co-polymer.